CLAIMS

1 A signal processing apparatus comprising:

analog filter means for performing band limitation of a reproduction signal having non-linear distortion, and for performing analog equalization thereof;

first adaptive equalizing filter means for equalizing a linear signal of a filter output of the analog filter mans; and

second adaptive equalizing filter means connected in parallel with the first adaptive equalizing means in order to correct non-linear distortion that the filter output of the analog filter means has.

2 The signal processing apparatus as set forth in claim 1, further comprising:

phase interpolation means for performing interpolation of phase on the basis of a filter output of the first adaptive equalizing filter means and a filter output of the second adaptive equalizing filter means; and

phase locked loop means for synchronizing phase of the phase interpolation mans on the basis of an interpolated output fed back from the phase compensation means.

3 The signal processing apparatus as set forth in claim 2,

wherein the second adaptive filter is Volterra filter.

4 The signal processing apparatus as set forth in claim 2, further comprising,

Viterbi detecting means for detecting error rate of the interpolated output fed back from the phase interpolation means to generate a feedback signal to be

delivered to the first adaptive equalizing filter and the second adaptive equalizing filter.

5 A signal processing method comprising:

an analog filter step for performing band limitation of a reproduction signal having non-linear distortion, and for performing analog equalization thereof;

a first adaptive equalizing filter step for equalizing a linear signal of a filter output of the analog filter step; and

a second adaptive equalizing filter step executed in parallel to the first adaptive equalizing filter step in order to correct non-linear distortion that the filter output of the analog filter step has.

6 The signal processing method as set forth in claim 5, comprising:

a phase interpolation step for performing interpolation of phase on the basis of a filter output of the first adaptive equalizing filter step and a filter output of the second adaptive equalizing filter means; and

a phase locked loop step for synchronizing phase of the phase interpolation step on the basis of an interpolated output fed back from the phase interpolation step.

7 The signal processing method as set forth in claim 6,

wherein the second adaptive equalizing filter is Volterra filter.

8 The signal processing method as set forth in claim 6, further comprising:

Viterbi detection step for detecting error rate of an interpolated output

obtained at the phase interpolation step to deliver a feedback signal at the first adaptive equalizing filter step and the second adaptive equalizing filter step.